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|--------------------------|------------------------|---------------------|--|
| <b>Interview Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                          | 10/648,457             | HOOKER ET AL.       |  |
|                          | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                          | Ramesh Krishnamurthy   | 3753                |  |

All participants (applicant, applicant's representative, PTO personnel):

(1) Ramesh Krishnamurthy. (3)\_\_\_\_\_.

(2) Paul D. Amrozowicz. (4)\_\_\_\_\_.

Date of Interview: 04 May 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal (copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Claim(s) discussed: 1.

Identification of prior art discussed: Johnson (US 2,912,007).

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See attachment.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

\_\_\_\_\_  
Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

**INGRASSIA FISHER & LORENZ, P.C.**

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**FACSIMILE TRANSMITTAL SHEET**

|                           |                                     |
|---------------------------|-------------------------------------|
| TO:                       | FROM:                               |
| Examiner R. Krishnamurthy | Paul D. Amrozowicz, Reg. No. 45,264 |
| COMPANY:                  | DATE:                               |
| USPTO                     | WEDNESDAY, MAY 03, 2006             |
| FAX NUMBER:               | TOTAL NO. OF PAGES INCLUDING COVER: |
| 571-273-4914              | 2                                   |
| PHONE NUMBER:             | SENDER'S REFERENCE NUMBER:          |
| 703-272-4914              | H0004404-3114                       |
| RE:                       | RECIPIENT'S REFERENCE NUMBER:       |
|                           | 10/648,457                          |

URGENT      FOR REVIEW      PLEASE COMMENT      PLEASE REPLY      PLEASE RECYCLE

**NOTES/COMMENTS:**

Examiner Krishnamurthy-

Thank you for agreeing to the interview tomorrow (5/4/06 @ 4:30 p.m. EDT). Attached you will find a copy of Fig. 2 from the '007 patent that is labeled consistent with how you are reading each of the elements recited in independent Claim 1 (at least according to the latest Office action).

I've also attached summaries of the fluid flow through the '007 valve when its associated solenoid is de-energized and energized, along with two modified figures that illustrate the summarized fluid flows. These summaries and illustrations are consistent with that found in col. 7, ll. 50-74 (for solenoid de-energized) and col. 7, l. 75 through col. 8, l. 21 (for solenoid energized) of the '007 patent.

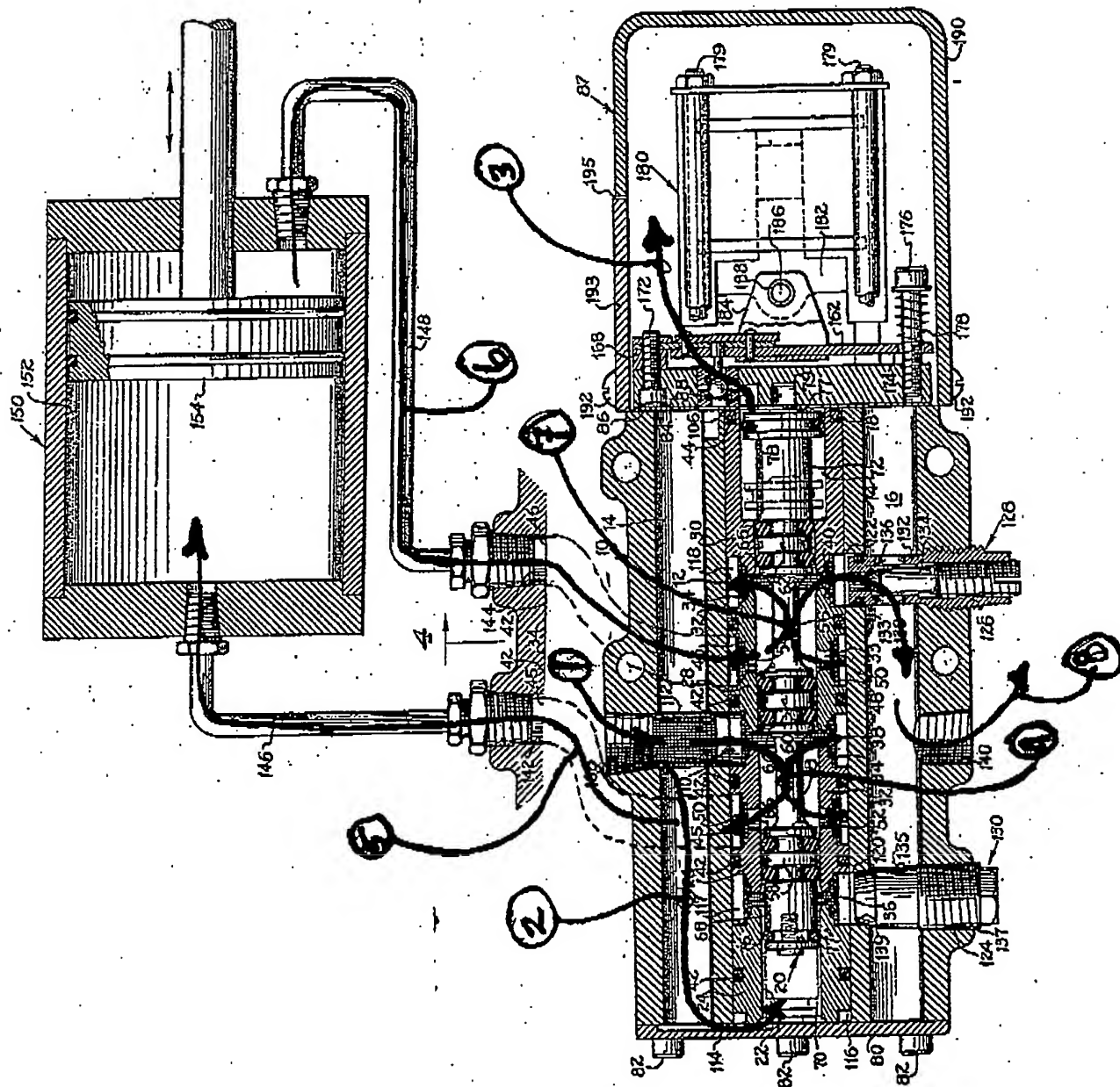
Based on the described operation, and as we can discuss during the interview tomorrow, it seems clear that when the actuator (piston 20) is in the "second position" (i.e., positioned to the left), the major channel (106), the minor channel (108, 110), and the actuator chamber (22) are not isolated from both the control port (45, 46) and the outlet port (140). If this were the case, fluid could never flow through the control ports and out the outlet port, and the valve would not operate as intended.

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED, AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAWS. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE OR AGENT RESPONSIBLE FOR DELIVERING THE MESSAGE TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION OR COPYING OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE AND RETURN ORIGINAL MESSAGE TO US AT THE ABOVE ADDRESS VIA U.S. POSTAL SERVICE. THANK YOU.



- I) Solenoid De-energized (spring, acting through lever 158 and pin 156 forces pilot ball valve 98 against seat 94, closing port 100):
- 1) Fluid enters manifold 14 from inlet port 108
  - 2) Fluid in manifold 14 passes through recess 114 to chamber 70 forcing control element 20 to the right limit
  - 3) Any air in chamber 74 is expelled by piston 72 through slot 106 and port 104 to interior of cover 190
  - 4) Fluid in manifold also flows through port 38, between lands 58, 60, through ports 52 and groove 45
  - 5) From groove 45, fluid flows through port 142, and conduit 146 to left-hand side of cylinder 152, forcing piston 154 to the right
  - 6) Fluid in right hand side of cylinder 152 is expelled through conduit 148, port 144, and ports 54,
  - 7) From ports 54, fluid flows into and through space between lands 60, 62, through port 40, groove 118, through metering port 136, and into exhaust manifold 116
  - 8) Fluid in exhaust manifold 116 flows out of port 140

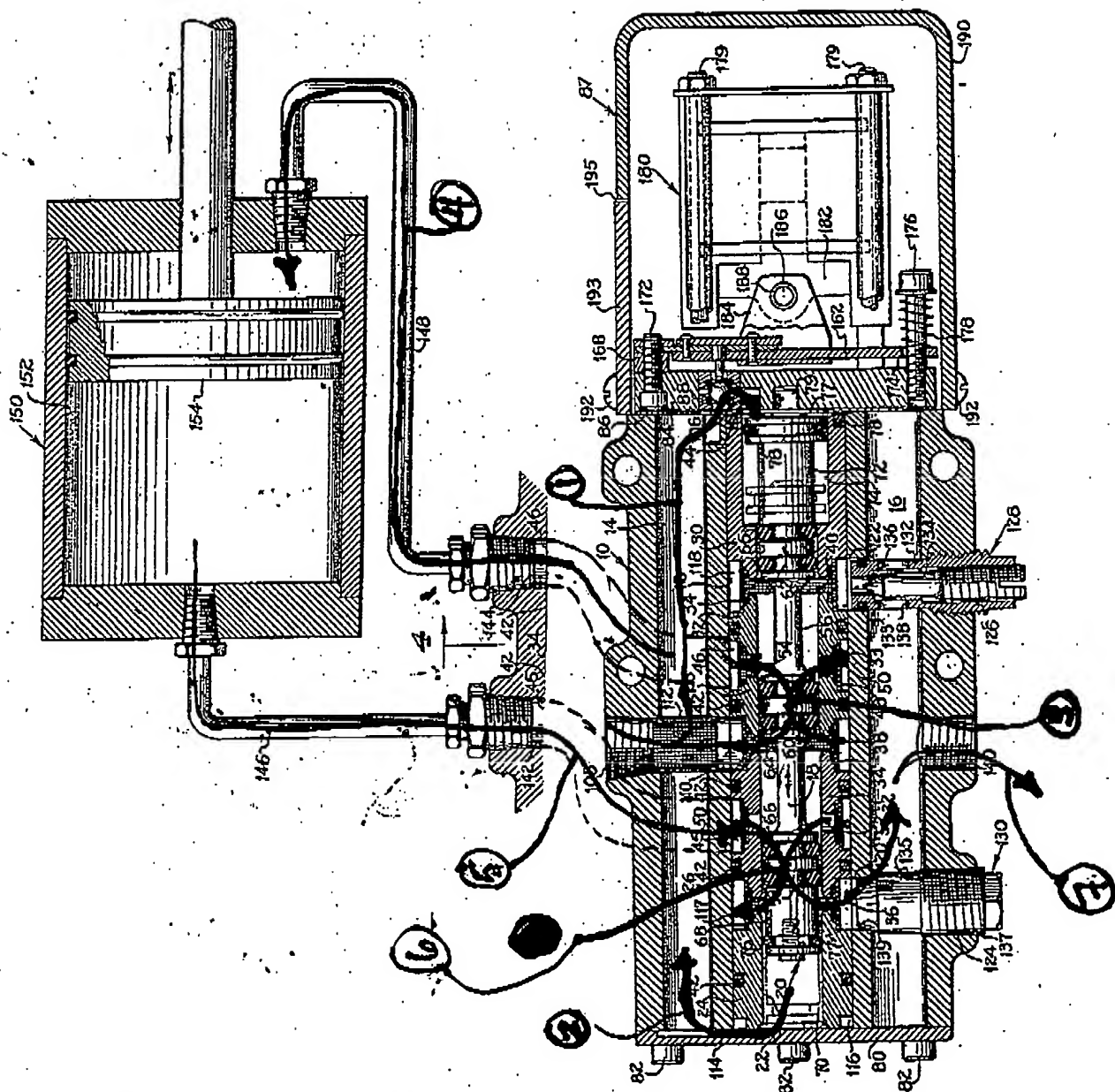
*I. Solenoid De-energized*



II) Solenoid Energized (plunger 182 moves lever 158 to the right, overcoming force of spring 178 and removing pin 156 from against ball 98):

- 1) Fluid pressure in manifold 14 flows through passage 102 and port 100, forcing ball 98 to the right, which closes exhaust port 104 and allows fluid to pass through slot 106 and into chamber 74
- 2) Control element shuttles to the left
- 3) Fluid in chamber 14 flows through port 38, between lands 60, 62, through ports 54, and groove 46
- 4) From groove 46, fluid flows through port 144 and conduit 148 into right hand side of cylinder 152, forcing piston 154 to the left
- 5) Fluid in left hand side of cylinder 152 is expelled through conduit 146, port 144, and into groove 45
- 6) From groove 45, fluid flows through ports 52, between lands 58, 60, through port 36, groove 117, needle valve 130, and into exhaust manifold 16
- 7) Fluid in exhaust manifold 116 flows out of port 140

## II. Solenoid Energized





**FOR DISCUSSION PURPOSES ONLY – DO NOT ENTER**

Claim 1 (currently amended): A solenoid control valve for use in supplying pressure control to a gas turbine bleed valve, comprising:

a housing having a supply inlet, a major channel, a minor channel, and a vent;

a ball pilot valve disposed within said housing and movable between at least (i) a closed position, in which the supply inlet is in fluid communication with the minor channel, and the major channel is in fluid communication with the vent, and (ii) an open position, in which the supply inlet is in fluid communication with the major channel and the minor channel, and the major channel is not in fluid communication with the vent;

an activation arm moveably disposed within said housing, said activation arm configured to move said pilot ball valve between the open and closed positions;

a dual coil solenoid disposed within said housing, said solenoid adapted to receive a current and configured, upon receipt thereof, to move said activation arm to a position that moves said ball pilot valve to its open position;

biasing means positioned within said dual coil solenoid and configured to bias said ball pilot valve toward its closed position;

an actuator chamber in fluid communication with said housing via said minor channel and said major channel, said actuator chamber having a vent contact and a fill contact disposed therein, and further including a control port, and an outlet port; and

an actuator positioned within said actuator chamber, said actuator having a major surface coupled to a poppet ~~that defines a minor surface~~, said poppet defining a minor surface and having a fill seat and a vent seat disposed thereon, the actuator movable between at least (i) a first position, in which the poppet vent seat contacts the vent contact, and the minor channel, the actuator chamber, and the control ~~part~~ port are in fluid communication with each other, and (ii) a second position, in which the poppet fill seat contacts the fill contact, the control port and the outlet port are in fluid communication with each other, and the major channel, the minor channel, and the actuator chamber are each isolated from both the control port and the outlet port.